## SEQUÊNCE LISTING

## RECEIVED

ScP 2 8 2001

TECH CENTER 1600/2900 cancelled and

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replaced w/sib seq. 1:st. sibnitted strolos

cher, Robert L. Ohad, Nir Kiyosue, Tomohiro Yadegari, Ramin Margossian, Linda Harada, John Goldberg, Robert B. The Regents of the University of California

<120> Nucleic Acids That Control Seed and Fruit Development in Plants

<130> 023070-086120US

<140> 09/177,249

<141> 1998-10-22

<150> US 09/071,838

<151> 1998-05-01

<160> 324

<170> PatentIn Ver. 2.0

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, gag Glu	gat Asp	caa Gln	gat Asp	tat Tyr 105	gct Ala	ctt Leu	gaa Glu	gaa Glu	gat Asp 110	gta Val	cca Pro	tta Leu	ttt Phe	ctt Leu 115	gat Asp	390
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tgi Cy:	cat s His	ato s Met	g cat His 280	s Glu	g aaq 1 Lys	g tat	gaç Glu	g ccc 1 Pro 285	GI	g tot ı Sei	t aga r Arg	tco g Sei	s ago Sei 290	. 61	a gac ı Asp	918

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2119

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- Lys Arg Lys Phe Glu Leu Arg Tyr Ile Pro Ser Val Ala Thr His Ala 35 40 45
- Ser His His Gln Ser Phe Asp Leu Asn Gln Pro Ala Ala Glu Asp Asp 50 55 60
- Asn Gly Gly Asp Asn Lys Ser Leu Leu Ser Arg Met Gln Asn Pro Leu 65 70 75 80
- Arg His Phe Ser Ala Ser Ser Asp Tyr Asn Ser Tyr Glu Asp Gln Gly 85 90 95
- Tyr Val Leu Asp Glu Asp Gln Asp Tyr Ala Leu Glu Glu Asp Val Pro 100 105 110
- Leu Phe Leu Asp Glu Asp Val Pro Leu Leu Pro Ser Val Lys Leu Pro 115 120 125
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- Gly Leu Asp Asp Leu Val Val Arg Arg Ala Leu Ala Lys Tyr Leu Glu 210 215 220
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- Cys Ser Glu His Cys Tyr Leu Lys Val Arg Ser Val Thr Glu Ala Asp 305 310 315 320

His Val Met Asp Asn Asp Asn Ser Ile Ser Asn Lys Ile Val Val Ser 325 330 335

Asp Pro Asn Asn Thr Met Trp Thr Pro Val Glu Lys Asp Leu Tyr Leu 340 345 350

Lys Gly Ile Glu Ile Phe Gly Arg Asn Ser Cys Asp Val Ala Leu Asn 355 360 365

Ile Leu Arg Gly Leu Lys Thr Cys Leu Glu Ile Tyr Asn Tyr Met Arg

Glu Gln Asp Gln Cys Thr Met Ser Leu Asp Leu Asn Lys Thr Thr Gln 385 390 395

Arg His Asn Gln Val Thr Lys Lys Val Ser Arg Lys Ser Ser Arg Ser

Val Arg Lys Lys Ser Arg Leu Arg Lys Tyr Ala Arg Tyr Pro Pro Ala 420 425 430

Leu Lys Lys Thr Thr Ser Gly Glu Ala Lys Phe Tyr Lys His Tyr Thr 435 440 445

Pro Cys Thr Cys Lys Ser Lys Cys Gly Gln Gln Cys Pro Cys Leu Thr 450 455 460

His Glu Asn Cys Cys Glu Lys Tyr Cys Gly Cys Ser Lys Asp Cys Asn 465 470 475

Asn Arg Phe Gly Cys Asn Cys Ala Ile Gly Gln Cys Thr Asn Arg 485 490 495

Gln Cys Pro Cys Phe Ala Ala Asn Arg Glu Cys Asp Pro Asp Leu Cys 500 505 510

Arg Ser Cys Pro Leu Ser Cys Gly Asp Gly Thr Leu Gly Glu Thr Pro 515 520 525

Val Gln Ile Gln Cys Lys Asn Met Gln Phe Leu Leu Gln Thr Asn Lys 530 535 540

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565 570 575

Leu Ile Thr His Asp Glu Ala Asn Glu Arg Gly Arg Ile Glu Asp Arg 580 585 590

Ile Gly Ser Ser Tyr Leu Phe Thr Leu Asn Asp Gln Leu Glu Ile Asp 595 600 605

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Glu His Glu Glu Thr Gln Lys Asn Thr Arg Asn Ser Trp Ser Leu Ile
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Arg Pro Phe Gln Met Ile Ser Ile Ser Phe Leu Ser Leu Leu Pro
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His Ser Leu Ser Gly Lys Pro Glu Cys Ser Val Leu His Ser His Leu 115 120 125

Tyr Ile Cys Trp Ile Val Leu Phe Ile Ala Gln Ala Cys Ala Phe Gly 130 135 140

Ile Lys Arg Thr Met Ser Thr Thr Met Ser Ile Asn Pro Asp Lys Asn 145 150 155 160

Leu Phe Leu Ala Thr His Glu Arg Trp Met Leu Val Arg Val Leu Phe 165 170 175

Phe Leu Gly Leu His Glu Val Met Leu Met Trp Phe Arg Val Val Val 180 185 190

Lys Pro Val Val Asp Asn Thr Ile Tyr Gly Val Tyr Val Glu Glu Arg 195 200 205

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Trp Cys Met Tyr Tyr Ile Cys Val Gly Ile Gly Leu Met Lys Ile Phe 260 265 270

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<210> 50 <211> 6 <212> PRT <213> Arabidopsis sp.

Phe Leu Arg Arg Ser Arg Leu Cys Ser

<400> 49

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Gly Ser Arg Leu Cys Ser
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Arg Arg Cys Thr Ile Ile Ser
<210> 52
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Arg Cys Thr Ile Ile Thr Lys Cys Gln Ala Ser Asn Cys
<210> 53
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Glu Ala Thr Thr Ile His Tyr Met Gly Leu His Gln Lys Ala Cys Val
Phe Phe Val Ser Tyr
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 Phe Gln Asn Ile Asn His Ile Leu Tyr Ser Asn His Ser
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 Cys Ile Tyr Thr Phe Leu
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<210> 56
<211> 74
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<213> Arabidopsis sp.

<400> 56

His Cys Ser Ser Gln Leu Met Ala Glu Ser Asp Ser Val Ile Gly Lys
1 5 10 15

Arg Gln Ile Tyr Tyr Leu Asn Gly Glu Ala Leu Glu Leu Ser Ser Glu 20 25 30

Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Ile Lys Lys Glu
35 40 45

Lys Cys Glu Phe Ser Glu Asp Val Asp Arg Phe Ile Trp Leu Val Phe 50 55 60

Ala Leu His Met Phe Leu Ile Ile Asn Leu 65 70

<210> 57 <211> 41 <212> PRT <213> Arabidopsis sp.

<400> 57 Ser Ile Phe Asn Lys Leu Leu Lys Lys Phe Ser Gly Arg Leu Gly Arg

Thr Met Val Trp Met Ilé Trp Ser Cys Gly Val Leu Ser Pro Ser Thr 20 25 30

Ser Lys Trp Met Phe Arg Thr Tyr Trp
35 40

<210> 58 <211> 17 <212> PRT <213> Arabidopsis sp.

Ile

<210> 59 <211> 15 <212> PRT <213> Arabidopsis sp.

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Phe Leu Leu Phe Phe Val Val Arg Asn Val Leu Asn Phe Gln Ile
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Cys Arg Lys Asp Thr Met Asn Ser Ser Leu Arg Met Met Glu Leu Leu
                                   10
Val Arg Leu Leu Ile
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His Pro Arg Gln
 1
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Leu Leu Leu Ser Arg Ile Leu Leu Ile Asp Val Ile Ala Val Val Ala
        5 .
Trp
<210> 63
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 Ile Phe Leu Phe
  1 .
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<210> 64 <211> 7 <212> PRT <213> Arabidopsis sp.

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Phe Ser His Lys Lys Gly Arg
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Ser Tyr Met Phe Leu Phe Tyr Phe Ile Ile Cys Phe Thr Asp Ile Arg
Leu Ser Tyr Ala
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<400> 66
Ile Arg Lys His
 <210> 67
 <211> 17
 <212> PRT
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 Ile His Leu Asn Tyr Phe Val Ser Phe Thr Thr Leu Ile Tyr Lys Val
                                                            15
                                       10
 Lys
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 Leu Asp Cys Phe Gly Leu Ser Glu Arg Arg Gln Ile
 <210> 69
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Thr Thr Met Gln
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Ala Leu Leu Pro Gln Gly Leu Tyr Leu Ser Pro Ser Leu Ser Gln Phe
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Phe Cys Leu Phe Leu Asn Tyr Val Tyr
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Ile Gly Glu Glu Cys Asp Arg Ser
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 Ser Cys Asp Gly
  1
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 <211> 28
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 Leu Tyr Ile Lys Gln Asp Cys Gly Leu Arg Ser Lys Gln His Tyr Val
 Asp Ala Cys Arg Glu Gly Ser Leu Leu Glu Arg Asn
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<212> PRT

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Asp Ile Trp Glu Lys Gln Val Lys Lys
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<211> 18
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Cys Ile Asn Ile Tyr Thr Tyr Thr Val Phe Leu Asp Tyr Ala Gly Ser
                                      10
Gln Leu
<210> 76
<211> 9
<212> PRT
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<400> 76
Cys Cys Ile Lys His Thr Ser Gly Ala
                   5
 <210> 77
 <211> 21
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 Asp Val Pro Arg Asp Leu Gln Leu His Ala Arg Thr Arg Ser Met Tyr
                                       10
 Tyr Val Ile Arg Pro
              20
 <210> 78
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 <212> PRT
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 Gln Asn Tyr Thr Lys Thr Gln Ser Gly Thr Leu Thr Tyr Val Val Ile
 Ile Leu Met Thr Cys Met Leu Lys Thr His Glu Val Ser Tyr Met Cys
                                                        30
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 <210> 79
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<211> 33 <212> PRT

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Trp Phe Tyr His Arg Leu Pro Lys Lys Tyr Leu Glu Lys Val Val Gly
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Arg Ser Ala Lys Asn Arg Asp Ser Glu Asn Met Leu Val Ile Arg Leu 25

Leu

<210> 80

<211> 29

<212> PRT

<213> Arabidopsis sp.

<400> 80 Arg Lys Gln Leu Val Glu Lys Leu Ser Phe Ile Ser Thr Thr His His 10

Ala Leu Ala Ser Gln Asn Val Asp Ser Asn Ala Leu Val 20

<210> 81

<211> 17

<212> PRT

<213> Arabidopsis sp.

<400> 81

Leu Thr Lys Ile Ala Ala Arg Asn Ile Ala Gly Met Ser Phe Asn Phe 15 10 .

Ser

<210> 82

<211> 62

<212> PRT

<213> Arabidopsis sp.

<400> 82

Ala Gly Arg Ser Met Arg Phe Asn Leu Asn Met Ser Leu Tyr Phe Leu 15

Phe Arg Cys Ser Lys Asp Cys Asn Asn Arg Phe Gly Gly Cys Asn Cys

Ala Ile Gly Gln Cys Thr Asn Arg Gln Cys Pro Cys Phe Ala Ala Asn

Arg Glu Cys Asp Pro Asp Leu Cys Arg Ser Cys Pro Leu Arg 50

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<211> 66
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<213> Arabidopsis sp.

Ser Asn Gln Lys Ser Tyr Lys Lys Asn Phe Ile Tyr Ser Cys Gly Asp 20 25 30

Gly Thr Leu Gly Glu Thr Pro Val Gln Ile Gln Cys Lys Asn Met Gln 35 40 45

Phe Leu Leu Gln Thr Asn Lys Lys Val Ile Asn Val Lys Ser Val Pro 50 55 60

Lys Ile 65

<210> 84 <211> 20 <212> PRT <213> Arabidopsis sp.

<400> 84
Leu Tyr Glu Arg His Leu Thr Ile Ile Ser Arg Ile Leu Leu Asp Ser
1 10 15

His Trp Lys Val

<210> 85 <211> 41 <212> PRT <213> Arabidopsis sp.

Lys Asn Lys Phe Asn Ser Tyr Trp Cys Ile His Asn Thr Phe Phe Phe 20 25 30

Leu Ile Met Phe Tyr Thr Leu Asp His 35 40

<210> 86 <211> 13 <212> PRT <213> Arabidopsis sp.

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Ile Tyr Cys Val Ile Trp Phe Asp Pro Ser Gly Leu Ser
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<211> 12
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Val Ser Arg Arg Ile Tyr Trp Arg Thr Asp His Ser
<210> 88
<211> 17
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<213> Arabidopsis sp.
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Ala Trp Glu Asn Arg Arg Ser Asp Trp Phe Phe Leu Pro Leu Tyr Leu
                                      10
Glu
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<2:11> 9
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 <400> 89
 Ser Gly Asn Phe Arg Ile Ile Leu Lys
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 <212> PRT
 <213> Arabidopsis sp.
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 Arg Phe Asn His Ser Arg Val Thr His Leu Phe Glu Ser Lys
 <210> 91
 <211> 32
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 <213> Arabidopsis sp.
 <400> 91
 His Leu Phe Tyr Ser Ser Lys Ser Met Leu Ala Val Lys Glu Thr Ser
```

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Ser Asn Phe Ser Ile Thr Gln Gln Asp Leu Thr Ala Thr Pro Arg Tyr
            20 ·
<210> 92
<211> 19
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<400> 92
Ala Val Ile Leu Tyr Leu Glu Gln Ile Leu Thr Leu Tyr Lys Gln Lys
                                     10
Tyr Leu Cys
<210> 93
<211> 15
<212> PRT
<213> Arabidopsis sp.
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Leu Asn Arg Val Ser Thr Leu Leu Val Val Asp Trp Phe Ser Tyr
                                      10
 <210> 94
 <211> 50
 <212> PRT
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Arg Tyr Ser Lys Lys Leu Lys Leu Ile Leu Asn Asp Phe Phe Leu Ser
                                      10
 Arg Lys Phe Arg Leu Arg Lys Phe Met Val Ser Cys Ala Val Asp Asp
 Cys Glu Arg Arg Ser Glu Asp Trp Ser Ile Cys Gly Glu Ser Asn Arg
          35
 Arg Arg
      50
 <210> 95
 <211> 21
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Gly Ala Phe Leu Arg Leu Leu Leu Trp Thr Arg Thr Cys Gly Leu Val

10

Ala Trp Ser Arg Thr

<400> 95

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Lys Asp Trp Cys Phe
 1
<210> 97
<211> 28
<212> PRT
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Gly Ser Pro Ser Ser Ser Leu Val Phe Asp Leu Arg Arg Ser Ser Asn
Ser Ser Ser Pro Phe Phe Met Leu Trp Tyr Ile Asn
                                · 25
             20
<210> 98
<211> 7
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<213> Arabidopsis sp.
<400> 98
Cys Asn Ala Ile Leu Cys Tyr
  1
                       100
 <210> 99
 <211> 52
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 <213> Arabidopsis sp.
 <400> 99
 Val Ser Val Leu Phe Val Leu Gly Cys Phe Val Cys Ile Ile Cys Val
 Leu Thr Phe Lys Val Phe Phe Leu Tyr Phe Asn Leu Lys Thr Met Phe
              20
 Met Leu Leu Val Cys Ile Asp Leu Trp Lys Lys Lys Ala Leu His Asn
                               40
          35
 Phe Thr Phe Ile
     50
 <210> 100
 <211> 33
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 <213> Arabidopsis sp.
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Ser Ser Phe Ser Glu Lys Ser His Asn Thr Ser Leu Trp Tyr Val Met
Tyr Lys Asn Val Lys Ile Met Gly Phe Ile Ile Lys Lys Lys Tyr Trp
                                 25
Leu
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<212> PRT
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<400> 101
Met Lys Tyr Ser
<210> 102
<211> 4
<212> PRT
<213> Arabidopsis sp.
<400> 102
Asn Phe Arg Tyr
 1
<210> 103
<211> 4
 <212> PRT
<213> Arabidopsis sp.
 <400> 103
 Leu Val Trp Phe
 1 .
 <210> 104
 <211> 8
 <212> PRT
 <213> Arabidopsis sp.
 <400> 104
 Asn Val Phe Arg Asp Leu Ile Leu
   1
 <210> 105
 <211> 10
 <212> PRT
 <213> Arabidopsis sp.
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```
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Tyr Met Glu Glu Ser Ser Thr Lys Trp Leu
<210> 106
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<212> PRT
<213> Arabidopsis sp.
<400> 106
Leu Thr Lys Gly Phe Thr Leu Met
<210> 107
<211> 16
<212> PRT
<213> Arabidopsis sp.
<400> 107
His Leu Val Ser Lys Gln Ile Lys Thr Lys Lys Lys Lys Ala Leu
<210> 108
<211> 12
<212> PRT
<213> Arabidopsis sp.
<400> 108
Asn Pro Lys Val Thr Ile Phe Lys Lys Ser Lys Leu
                   5
<210> 109
<211> 9
<212> PRT
<213> Arabidopsis sp.
<400> 109
Met Phe Gly Ile Ala Asn Asp Tyr Cys
 <210> 110
 <211> 17
 <212> PRT
 <213> Arabidopsis sp.
 <400> 110
 Met Leu Asn Ile His Glu Asp Val Lys Asn Met Leu Asp Leu Trp Asn
```

Arg

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<400> 115
Thr Trp Leu Pro Ile Thr Val Leu Met Leu Leu Tyr Arg Ser Phe Leu
1 5 10 15
```

His Pro Leu Phe Leu His Ile Gln Glu Thr Val Ser Ser His Phe Leu 20 25 30

Ser Ser Ser Gln Cys Phe Asn Leu Cys Glu Leu Arg Trp Asn Met Lys
35 40 45

Lys His Lys Arg Thr Gln Glu Thr Ala Gly Pro 50 55

<210> 116

<211> 5

<212> PRT

<213> Arabidopsis sp.

<400> 116 Phe Asp His Phe Lys

<210> 117

<211> 57

1

<212> PRT

<213> Arabidopsis sp.

<400> 117

Ser Pro Leu Ala Phe Leu Ala Ser Ser Ser Leu Tyr Leu Ser Ser Phe
1 10 15

Phe His Val Ser Leu Ser Ile Pro Pro Gln Leu Arg Ser Pro Ser Pro 20 25 30

Ala Phe Pro Leu Leu Phe Thr Arg Gln Met Ser Glu Ser Tyr Thr Arg 35 40 45

Ser Cys Phe Ser Ser Ser Ser Ser Leu 50 55

<210> 118

<211> 37

<212> PRT

<213> Arabidopsis sp.

<400> 118

Ser Thr Val Ser Gln Glu Asn Gln Asn Ala Leu Phe Ser Ile Pro Ile
1 10 15

Ser Thr Ser Ala Gly Ser Phe Ser Ser Ser Pro Lys Leu Val Pro Leu 20 25 30

Gly Ser Lys Glu Pro 35

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<212> PRT
<213> Arabidopsis sp.
<400> 119
Ala Arg Pro Cys Leu
<210> 120
<211> 27
<212> PRT
<213> Arabidopsis sp.
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Ile Gln Thr Lys Thr Cys Phe Leu Arg His Met Lys Asp Gly Cys Trp
Leu Gly Phe Cys Ser Phe Trp Gly Tyr Thr Lys
              20
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 <211> 31
 <212> PRT
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 Cys Gly Leu Glu Ser Trp Leu Ser Leu Trp Leu Thr Thr Leu Tyr Met
                                       10
 Gly Ser Thr Trp Arg Arg Gly Gly Pro Arg Glu Pro Leu Trp Gln
                                   25
 <210> 122
 <211> 5
 <212> PRT
 <213> Arabidopsis sp.
 <400> 122
 Cys Gly Gly Gly
 <210> 123
 <211> 23
 <212> PRT
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 Lys Val Leu Trp Trp Trp Leu Arg Arg Ile Asp Leu Thr Ser Pro Phe
 Val Trp Arg Val Ser Ile Leu
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20

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 Thr Gly Val Cys Ile Thr Ser Val Leu Glu Leu Val
 <210> 125
 <211> 9
 <212> PRT
 <213> Arabidopsis sp.
 <400> 125
 Arg Ser Ser Lys Gly Phe Trp Ile Leu
 <210> 126
 <211> 36
 <212> PRT
 <213> Arabidopsis sp.
 <400> 126
 Ala Leu Arg Gly Arg Glu Lys Ala Val Asn His Val Phe Leu Met Ile
 Cys Val Met Met Ile Met Cys Lys Ile Phe Asp Ile Leu Tyr Ser Ser
 Leu Glu Cys Phe
           35
 <210>.127
  <211> 13
  <212> PRT
  <213> Arabidopsis sp.
  Asp Phe Phe Ile Phe Ile Phe Tyr Phe Leu Leu Gly Ile
                                        10
  <210> 128
  <211> 7
  <212> PRT
  <213> Arabidopsis sp.
  <400> 128
  Pro Val Tyr Met Ser Gln Lys
```

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<210> 129
<211> 9
<212> PRT
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<400> 129
Asn Ile Arg Lys Gln Lys Tyr Phe Ile
<210> 130
<211> 14
<212> PRT
<213> Arabidopsis sp.
<400> 130
Pro Leu Asn Ile Asn Leu Ser Leu Phe Ile Ile Phe Leu
                                     10
<210> 131
<211> 10
<212> PRT
<213> Arabidopsis sp.
<400> 131
His Thr Leu Phe Lys Lys Asn Leu Glu Ile
                 5
<210> 132
<211> 8
<212> PRT
<213> Arabidopsis sp.
<400> 132
Ile Val Lys Asn Ile Gly Phe Thr
<210> 133
<211> 8
<212> PRT
<213> Arabidopsis sp.
<400> 133
Met Arg Ile Ile Lys Phe Thr Asn
 1
<210> 134
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<213> Arabidopsis sp.
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<400> 134
Pro Tyr Ile Tyr Phe
<210> 135
<211> 14
<212> PRT
<213> Arabidopsis sp.
<400> 135
Arg Phe Lys Leu Ile Leu Phe Leu Pro Tyr Met His Asn Ile
                  5
<210> 136
<211> 39
<212> PRT
<213> Arabidopsis sp.
<400> 136
Leu Gly Met Asn Thr Asn Ile Tyr Asn Asp Ile Asn Ile Ser Leu Thr
Gly His Ser Lys Met Tyr Ile Leu Ile Tyr Gln His Phe Phe Ile Gly
                                 25
Leu Leu Asn Gln Val Val Thr
      35
<210> 137
<211> 35
<212> PRT
 <213> Arabidopsis sp.
 <400> 137
Val Asn Ala Phe Phe Phe Ile Ile Leu Tyr Met Asn Leu Asn Leu Ser
                                      10
Cys Gln Thr Ser Ser Lys Pro Asn Ile Tyr Ile His Ile Val Leu Tyr
                                 25
         . 20
 Phe Glu Asn
          35
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 <211> 11
 <212> PRT.
 <213> Arabidopsis sp.
 <400> 138
 Asn Phe Leu Lys Phe Pro Ile Leu Phe Ser Phe
```

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<210> 139
<211> 55
<212> PRT
<213> Arabidopsis sp.
<400> 139
Ser Lys Gln Val Gln Ile Arg Phe Phe Gln Ile Ile Phe Leu Asn
Lys Val Phe Tyr Lys Lys Ser Thr Ser Tyr Leu Lys Asn Pro Leu
             20
His Tyr Pro Phe His Gln His Gln Arg Arg Glu Lys Lys Lys Arg
Arg Val Val Asn Gly Glu Gly
<210> 140
<211> 6
<212> PRT
<213> Arabidopsis sp.
<400> 140
Phe His Ser Lys His Ile
  1
<210> 141
<211> 15
<212> PRT
<213> Arabidopsis sp.
<400> 141
Val Met Lys Ser Ile Tyr Phe Asn Cys Val Phe Met Ile Asp Gln
 <210> 142
 <211> 19
 <212> PRT
 <213> Arabidopsis sp.
 His Leu Gly Leu Asn Phe Leu Val Ile Tyr Tyr Val Ile Arg Pro Met
                                      10
 His Asp Pro
 <210> 143
 <211> 4
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<212> PRT

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<400> 143
Asn Phe Tyr Phe .
<210> 144
<211> 6
<212> PRT
<213> Arabidopsis sp.
<400> 144
Ile Cys Leu Gly Lys Pro
                  5
<210> 145
<211> 107
<212> PRT
<213> Arabidopsis sp.
<400> 145
Gly Phe Ala Thr Arg Thr Lys Ser Asp Lys Arg Ala Asn Arg Lys Gly
Glu Ile Ser Ala Tyr Gln Gly Lys Arg His Leu Val Ala Leu Ile Phe
                                  25
Tyr Ser Leu Leu Tyr Val Phe Leu Lys Ile Lys Glu Arg Arg Gly Leu
Asn Leu Ile Thr Ile Arg Phe Gln Arg Asp Val Lys Ile His Leu Ile
Asn Ser Tyr Thr Leu Val Ile Ile Phe Lys Thr Lys Lys Arg Asn Phe
                      70
Gln Thr Phe Lys Leu Lys Thr Glu Phe Arg Lys Cys Gln Arg Ile Asp
Asn Asp Ile Gln Ile Cys Arg Val Ser Lys Thr
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<210> 146
<211> 10
<212> PRT
<213> Arabidopsis sp.

<400> 146
Asn Lys Lys Ile Ile Asn Ile Phe Ile Ile
1 5 10

<210> 147 <211> 30 <212> PRT <213> Arabidopsis sp.

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<400> 147
Ser Trp Asn Leu Gly Tyr Lys Ile Lys Leu Lys Ile Ile Val Asp Phe
Phe Val Phe Val Lys Gln Asn Ser Asn Thr Ile Cys Phe Phe
<210> 148
<211> 5
<212> PRT
<213> Arabidopsis sp.
<400> 148
Tyr Lys Glu Thr Lys
 1
<210> 149
<211> 15
<212> PRT
<213> Arabidopsis sp.
<400> 149
Val Gln Ile Val Phe Phe Leu Thr Phe Ser Gln Lys Ser Gln Asp
                   5
<210> 150
<211> 38
<212> PRT
<213> Arabidopsis sp.
<400> 150
Cys Ile Tyr Gln Glu Ile Glu Ile Lys Thr Phe Val Phe Lys Tyr Ser
Ser Phe Thr Ile Tyr Arg Val Gln Phe Leu Lys Phe Lys Lys Ser Phe
Thr Tyr Ile Leu Leu Asp
          35.
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 <211> 147
 <212> PRT
 <213> Arabidopsis sp.
 <400> 151
 Gln Arg Lys Phe Glu Leu Arg Tyr Ile Pro Ser Val Ala Thr His Ala
 Ser His His Gln Ser Phe Asp Leu Asn Gln Pro Ala Ala Glu Asp Asp
             - 20
```

Asn Gly Gly Asp Asn Lys Ser Leu Leu Ser Arg Met Gln Asn Pro Leu 35 40 45

Arg His Phe Ser Ala Ser Ser Asp Tyr Asn Ser Tyr Glu Asp Gln Gly 50 55 60

Tyr Val Leu Asp Glu Asp Gln Asp Tyr Ala Leu Glu Glu Asp Val Pro
65 70 75 80

Leu Phe Leu Asp Glu Asp Val Pro Leu Leu Pro Ser Val Lys Leu Pro 85 90 95

Ile Val Glu Lys Leu Pro Arg Ser Ile Thr Trp Val Phe Thr Lys Arg

His Val Cys Phe Leu Phe Arg Thr Ser Phe Lys Ile Leu Ile Ile Tyr 115 120 125

Tyr Ile Val Ile Thr His Ser Ala Tyr Ile His Phe Phe Asn Ile Ala 130 135 140

Val Ala Ser ... 145

<210> 152

<211> 6

<212> PRT

<213> Arabidopsis sp.

<400> 152

Trp Leu Lys Val Ile Leu

<210> 153

<211> 8

<212> PRT

<213> Arabidopsis sp.

<400> 153

Leu Val Arg Asp Lys Ser Ile Ile

<210> 154

<211> 4

<212> PRT

<213> Arabidopsis sp.

<400> 154

Met Val Arg His

1

<210> 155

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<211> 26
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<213> Arabidopsis sp.
<400> 155
Ala Val Lys Lys Met Arg Lys Met Lys Lys Met Arg Lys Lys Ser
                                      10
Arg Lys Lys Asn Ala Asn Phe Leu Lys Met
             20
<210> 156
<211> 5
<212> PRT
<213> Arabidopsis sp.
<400> 156
Thr Asp Leu Tyr Gly
<210> 157
<211> 7
<212> PRT
<213> Arabidopsis sp.
<400> 157
Phe Leu His Tyr Ile Cys Ser
<210> 158
 <211> 25
 <212> PRT
 <213> Arabidopsis sp.
 <400> 158
 Leu Leu Ile Cys Ser Pro Tyr Leu Ile Asn Cys Ser Arg Asn Phe Gln
 Asp Gly Trp Ala Gly Leu Trp Phe Gly
 <210> 159
 <211> 32
 <212> PRT
 <213> Arabidopsis sp.
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 Ser Gly Arg Ala Ala Cys Ser Arg Gln Val Pro Arg Ser Gly Cys Phe
 Gly His Ile Gly Asn Asn Ile Arg Ile Lys Thr Ser Tyr Val Asp Gln
            . 20
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<210> 160
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<400> 160
Leu Ser Cys Leu Phe Asn Phe Cys Cys Phe Ser Ser
 <210> 161
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 <212> PRT
 <213> Arabidopsis sp.
 <400> 161
 Ile Phe Lys Ser Asn Val Gly Lys Ile Gln
 <210> 162
 <211> 4
 <212> PRT
 <213> Arabidopsis sp.
 <400> 162
 Trp Asn Cys Trp
   1
 <210> 163
 <211> 14
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 <400> 163
 Phe Asp Ile Gln Asp Asn Asn Tyr Cys Phe Pro Gly Phe Cys
                                       10
   1
 <210> 164
 <211> 59
 <212> PRT
 <213> Arabidopsis sp.
 <400> 164
 Thr Ser Leu Pro Ser Leu His Gly Asn Phe Glu Ser Phe Phe Phe Asn
                    5
 Leu Ala Thr Lys Lys Gly Asp Asp His Thr Cys Phe Tyr Phe Ile Leu
                                    25
               20
 Ser Phe Val Leu Gln Ile Phe Asp Cys His Met His Glu Lys Tyr Glu
                                40
  Pro Glu Ser Arg Ser Val Ser Ile Lys Phe Ile
                           55
       50
```

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<212> PRT
<213> Arabidopsis sp.
<400> 165
Ile Ile Leu Leu Val Ser Gln Pro Leu Tyr Ile Arg Leu Ser Asp
                                     10
<210> 166
<211> 56
<212> PRT
<213> Arabidopsis sp.
<400> 166
Ile Ala Leu Ala Cys Gln Ser Glu Asp Lys Ser Ser Leu Phe Glu Asp
Glu Asp Arg Gln Pro Cys Ser Glu His Cys Tyr Leu Lys Val Ser Ile
                                 25
Ser Leu Pro Leu Ser Leu Asn Phe Phe Val Tyr Ser Leu Ile Thr Phe
Ile Ser Tyr Trp Phe Asn Ile Lys
<210> 167
<211> 50
<212> PRT
 <213> Arabidopsis sp. 🗇
 <400> 167
Val Arg Ser Val Thr Glu Ala Asp His Val Met Asp Asn Asp Asn Ser
                   5 ;
 Ile Ser Asn Lys Ile Val Val Ser Asp Pro Asn Asn Thr Met Trp Thr
                                  25
              20
 Pro Val Glu Lys Asp Leu Tyr Leu Lys Gly Ile Glu Ile Phe Gly Arg
                              40
 Asn Arg
      50
 <210> 168
 <211> 68
 <212> PRT
 <213> Arabidopsis sp.
 <400> 168
 Lys Asn Lys Asn Arg Phe Asn Ala Leu Ile Tyr Ile Leu Thr Leu Tyr
                                       10
```

```
Ser Leu Ile Met Leu Val Arg Ser Cys Asp Val Ala Leu Asn Ile Leu
                                  25
             20 .
```

Arg Gly Leu Lys Thr Cys Leu Glu Ile Tyr Asn Tyr Met Arg Glu Gln

Asp Gln Cys Thr Met Ser Leu Asp Leu Asn Lys Thr Thr Gln Arg His

Asn Gln Val His 65

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<400> 169

Lys His Met Lys Phe Pro Ile Cys Val Asp Gly Phe Ile Thr Gly Tyr 10

Gln Lys Ser Ile Ser Lys Lys

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<211> 22

<212> PRT

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<400> 170

Val Gly Pro Gln Lys Ile Glu Thr Pro Lys Ile Cys Ser Leu Ser Ala

Cys Phe Lys Glu Asn Asn 20

<210> 171

<211> 41

<212> PRT

<213> Arabidopsis sp.

<400> 171

Ala Leu His Thr Met His Leu Gln Val Lys Met Trp Thr Ala Met Pro

Leu Phe Asn Ser Arg Lys Leu Leu Arg Glu Ile Leu Arg Val Cys His 25

Ser Ile Phe Pro Lys Pro Glu Asp Pro 35

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Glu Asp Val Ile Val Gln Leu Ala Asn Ala Gln Ile Asp Asn Val Leu 20 25 30

Val Leu Leu Ile Val Asn Ala Ile Gln Ile Phe Val Gly Val Val 35 40 45

Leu Leu Gly Asn Thr Phe Thr Ser Ile Ser Leu Tyr Thr Asn Ser Ile
50 55 60

Ile Lys Val Ile Gln Thr Lys Ser Leu Ile Lys Lys Thr Leu Tyr Ile 65 70 75 80

Ala Val Glu Met Ala Leu Leu Val Arg His Gln Cys Lys Ser Asn Ala 85 90 95

Arg Thr Cys Asn Ser Ser Phe Lys Pro Ile Lys Arg 100 105

<210> 173 <211> 17 <212> PRT <213> Arabidopsis sp.

<400> 173 Ser Thr Ser Asn Pro Tyr Arg Lys Phe Lys Thr Asn Tyr Thr Lys Asp 1 10 15

Ile

<210> 174 <211> 7 <212> PRT <213> Arabidopsis sp. <400> 174

Leu Ser Phe Pro Val Phe Tyr

1

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<210> 175 <211> 39 <212> PRT <213> Arabidopsis sp.

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Ile Leu Ile Gly Lys Ser Asp Val His Gly Trp Gly Ala Phe Thr Trp
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Val Ser Asn His Val Asn Ile Arg Ile Ser Leu Ile Val Ile Gly Ala 25

Phe Ile Thr Leu Phe Phe Phe 35

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<400> 176 Cys Phe Ile Leu

<210> 177

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<212> PRT

<213> Arabidopsis sp.

<400> 177 Thr Ile Lys Tyr Ile Val

<210> 178

<211> 53

<212> PRT

<213> Arabidopsis sp.

<400> 178

Tyr Gly Leu Thr Arg Gln Asp Ser Leu Lys Lys Asn Glu Tyr Leu Gly 15 10

Glu Tyr Thr Gly Glu Leu Ile Thr His Asp Glu Ala Asn Glu Arg Gly 20

Arg Ile Glu Asp Arg Ile Gly Ser Ser Tyr Leu Phe Thr Leu Asn Asp 45 40 35

Gln Val Thr Ser Glu 50

<210> 179

<211> 28

<212> PRT

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Ser Asn Val Leu Ile Ile Arg Gly Leu His Ile Tyr Ser Asn Gln Ser
                                      10
Asn Ile Tyr Phe Thr Ala Arg Asn Arg Cys Ser Pro
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Arg Lys Arg Val Gln Ile Ser Gln Ser Leu Ser Lys Thr
                  5
<210> 181
<211> 16
<212> PRT
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Leu Leu Arg Gln Gly Thr Lys Pro Leu Tyr Phe Ile Leu Asn Lys Tyr
                                      10
                   5
<210> 182
<211> 13
<212> PRT
<213> Arabidopsis sp.
<400> 182
His Tyr Thr Asn Lys Asn Thr Tyr Val Ser Phe Phe Ser
<210> 183
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 <212> PRT
<213> Arabidopsis sp.
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Ile Val Tyr Gln Leu Tyr Ser Ser Leu Ile Gly Phe His Ile Glu Asp
 Ile Pro Arg Asn Ser Asn Ser Phe
              20
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<400> 184

Met Ile Phe Ser Cys Arg Glu Asn Leu Gly Tyr Glu Asn Leu Trp Phe
1 5 10 15
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Arg Val Gln Leu Met Ile Val Arg Gly Asp Gln Arg Ile Gly Leu Phe 20 25 30

Ala Glu Arg Ala Ile Glu Glu Glu Glu Glu Leu Phe Phe Asp Tyr Cys
35 40 45

Tyr Gly Pro Glu His Ala Asp Trp Ser Arg Gly Arg Glu Pro Arg Lys
50 55 60

Thr Gly Ala Ser Lys Arg Ser Lys Glu Ala Arg Pro Ala Arg 65 70 75

<210> 185

<211> 37

<212> PRT

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Ile Asn Asn Val Met Leu Phe Cys Val Thr Lys Pro Lys Leu Lys Phe 20 25 30

Leu Phe Tyr Leu Phe 35

<210> 186

<211> 9

<212> PRT

<213> Arabidopsis sp.

<400> 186

Gly Val Leu Phe Val Ser Tyr Val Ser

<210> 187

<211> 10

<212> PRT

<213> Arabidopsis sp.

<400> 187

Leu Ser Lys Phe Ser Phe Cys Ile Ser Ile
1 5 10

<210> 188

<211> 6

<212> PRT

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Lys Gln Cys Leu Cys Cys
<210> 189
<211> 29
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Thr Phe Gly Lys Lys Leu Cys Thr Thr Leu His Leu Phe Ser Leu
His Leu Ala Lys Asn His Ile Thr Gln Val Cys Gly Thr
                                  25
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Cys Thr Lys Met Ser Lys
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Trp Val Leu Ser Leu Lys Lys Asn Ile Gly Tyr Glu
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 Ser Ile Val Arg Ile Leu Gly Ile Ser Ser Phe Gly Phe Lys Thr Phe
                                                           15
 Phe Glu Ile
 <210> 193
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 <212> PRT
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Phe Cys Ser Leu Leu Ser Asn Thr Trp Lys Asn His Gln Gln Ser Gly
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Cys Ser Leu Arg Lys Val Leu Leu
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Cys Lys Tyr Val Phe Asp Ala Ser Asn Ile
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Tyr Leu Asn Lys
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 Lys Gln Lys Lys Arg Lys Leu Phe Lys Ile Arg Lys
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 Leu Phe Ser Lys Asn Leu Asn Tyr Lys Leu Lys Cys Leu Glu Ser Arg
  1
 Thr Thr Ile Ala Lys Tyr Lys Cys
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Ile Tyr Met Lys Met
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Lys Thr Cys Trp Ile Cys Gly Ile Val Asn Asp His Gly
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Met Ala Gly Ser
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Ile His Tyr Phe
  1
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Lys Ser Asn Phe Phe Ile Ser Ile Ile Cys Phe Lys Glu Lys Lys Asn
                                     10 15 . . .
Thr Arg Arg Leu Ser Ile Cys Arg Leu Cys Ser Ser Val Asn Leu Tyr
              20
 Phe Lys Thr Gly Gly Leu Phe Ile Thr Ile Ser Leu Asp Met Phe Leu
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Cys Arg Pro Lys Asn Arg Glu Ile Arg Lys Gly Thr Phe Val Val Ile
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Val Thr Lys Gln Lys Ser Leu Tyr
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Ile Ile Arg Lys Asp Glu Lys Ile Lys Pro Leu
<210> 205
<211> 12
<212> PRT
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Leu Asp Asp His Arg Arg Gly Cys Gln Leu Gln Ser
<210> 206
 <211> 34
<212> PRT
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 Cys Phe Tyr Ile Asp Leu Ser Tyr Ile Leu Cys Ser Phe Thr Phe Lys
Lys Gln Tyr His Pro Ile Phe Phe Leu Leu Ser Val Ser Ile Phe
                                  25
 Ala Asn
 <210> 207
 <211> 21
 <212> PRT
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 Arg Asn Thr Lys Glu His Lys Lys Gln Leu Val Pro Asp Ser Thr Ile
                                       10
 Ser Asn Asp Leu His
              20
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<210> 208
<211> 106
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Pro Pro Pro Pro Ser Ile Phe Pro Leu Ser Phe Thr Ser Leu Ser Leu
Tyr Leu Leu Asn Ser Gly His Arg Leu Arg Arg Phe Leu Cys Tyr Ser
             20
Pro Gly Arg Cys Arg Ser Leu Ile His Asp Leu Val Ser His His Arg
Leu His Phe Asn Pro Gln Ser Leu Arg Lys Thr Arg Met Leu Cys Ser
                          55
Pro Phe Pro Ser Leu His Leu Leu Asp Arg Ser Leu His Arg Pro Ser
 65
Leu Cys Leu Trp Asp Gln Lys Asn His Glu His Asp His Val Tyr Lys
Ser Arg Gln Lys Leu Val Ser Cys Asp Thr
<210> 209
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<400> 209
Lys Met Asp Val Gly
  1
<210> 210
<211> 15
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 Gly Phe Val Leu Phe Gly Ala Thr Arg Ser Asp Ala Asp Val Val
 <210> 211
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 Gln His Tyr Ile Trp Gly Leu Arg Gly Gly Glu Val Val Arg Glu Ser
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Arg Cys Gly Ser Asp Leu Trp Tyr Asn Val Val Glu Ala Lys Arg 20 <210> 212 <211> 11 <212> PRT <213> Arabidopsis sp. <400> 212 Gly Arg Lys Ser Cys Gly Gly Gly Tyr Gly Gly 5 <210> 213 <211> 42 <212> PRT <213> Arabidopsis sp. <400> 213 Pro Pro His Ser Phe Gly Gly Ser Gln Phe Cys Glu Leu Val Tyr Val 1 Leu His Leu Cys Trp Asn Trp Phe Asn Glu Asp Leu Gln Arg Val Phe 25 Gly Phe Cys Glu Tyr Val Asp Phe Glu His <210> 214 <211> 6 <212> PRT <213> Arabidopsis sp. <400> 214 Glu Val Glu Lys Arg Leu

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Ile Met Cys Phe

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Ser Cys Val Arg Tyr Leu Thr Tyr Tyr Thr His Leu Leu Asn Val Phe
Glu Ile Phe Leu Phe Leu Phe Ser Ile Ser Cys
            20
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<211> 25
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Glu Phe Asn Pro Tyr Ile Cys His Lys Asn Ser Arg Ile Ser Glu Ser
                                   10
Lys Asn Ile Leu Ser Lys Asn Asn His
             20
<210> 218 ...
<211> 16 ·
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Leu Tyr Phe Tyr Asn Thr Pro Phe Leu Arg Lys Thr Trp Arg Phe Asn
 1 5
                                    10
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 Lys Ile Ser Asp Leu Arg Arg Ser Phe Lys Cys Val
              - 5
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<211> 6 <212> PRT <213> Arabidopsis sp.

<210> 220

<400> 220 Leu Asn Leu Arg Ile Glu 1 5

<210> 221 <211> 25 <212> PRT <213> Arabidopsis sp.

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Tyr Ser His Ile Tyr Ile Phe Glu Asp Leu Asn Ser Phe Cys Phe Phe
His Ile Cys Ile Ile Tyr Lys Leu Lys
             20
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Ile Leu Ile Tyr Ile Met Thr Leu Ile
<210> 223
<211> 10
<212> PRT
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<400> 223
Val Leu Pro Asp Thr Pro Lys Cys Ile Tyr
<210> 224
<211> 9
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<400> 224
Ser Ile Asn Ile Phe Ser Leu Val Tyr
<210> 225
<211> 14
<212> PRT
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Thr Lys Leu Ser His Lys Tyr Glu Leu Thr Pro Phe Phe Leu
                   5
 <210> 226
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 <212> PRT
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Ala Val Lys Arg Gln Ala Asn Pro Thr Ser Thr Tyr Ile
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Tyr Tyr Ile Leu Lys Ile Lys Ile Phe Leu Asn Phe Pro Tyr Tyr Phe
Pro Phe Lys Ala Ser Lys Ser Lys Tyr Val Ser Ser Arg Leu
             20
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 Phe Ser Leu Ile Arg Phe Ser Thr Lys Lys Asn Gln Leu Leu Ile
 <210> 229
 <211> 39
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 Lys Thr Leu Cys Ile Ile Leu Phe Thr Asn Ile Arg Glu Asp Glu Lys
 Lys Arg Arg Gly Glu Trp Leu Met Glu Lys Val Ser Phe Thr Pro Asn
                                   25
  Ile Tyr Glu Leu Thr Arg Leu
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  <211> 9
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  <400> 230
  Asn Pro Tyr Ile Leu Ile Val Cys Leu
                     5
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   <210> 231
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   <400> 231
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Ile Asn Asn Ile

<400> 256 Thr Ala Gln Glu Ile Phe Arg Thr Val Gly Gln Asp Tyr Gly Leu Asp

Asp Leu Val Val Arg Arg Ala Leu Ala Lys Tyr Leu Glu Val Asp Val

Ser Asp Ile Leu Val Thr Ile Phe Glu 35

<210> 257

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<213> Arabidopsis sp.

<400> 257

Lys Lev His Thr Ser Ile Asn Asn Phe Pro Ala Tyr Leu Ile Phe Val

Val Phe Arg Arg Glu Lys Cys Phe Lys Phe Ser Asn Leu Met 25 20

<210> 258

<211> 51

<212> PRT

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<400> 258

Glu Arg Tyr Asn Glu Leu Lys Leu Lys Asn Asp Gly Thr Ala Gly Glu 10

Ala Ser Asp Leu Thr Ser Lys Thr Ile Thr Thr Ala Phe Gln Asp Phe 20

Ala Asp Arg Arg His Cys Arg Arg Cys Met Val Thr Leu Asn Leu Ser 40

Phe Leu Ile . 50

<210> 259

<211> 36

<212> PRT

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<400> 259

Pro Gln Lys Arg Glu Met Ile Ile His Val Phe Ile Leu Phe Tyr His 10

Leu Phe Tyr Arg Tyr Ser Île Val Ile Cys Met Arg Ser Met Ser Pro 25

Ser Leu Asp Pro 35

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Ala Leu Asn Ser Phe Lys Leu Phe Cys
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Phe His Asn Pro Tyr Ile
<210> 262
<211> 50
<212> PRT
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Val Ile Asn Leu Ile Arg Leu Leu Trp Leu Val Arg Ala Lys Thr Asn
       5 10 15
Leu Val Cys Leu Arg Met Lys Ile Asp Asn His Ala Val Ser Ile Val
Thr Ser Arg Ser Leu Ser Leu Ser Leu Ser Leu Ser Ile Phe Leu Ser
                            40
         35
 Ile Pro
     50
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 Leu Arg Leu Leu Val Thr Gly Leu Ile Leu Asn Arg
                                    10
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 Gln Lys Leu Ile Met
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Trp Ile Met Ile Thr Leu Tyr Gln Thr Arg Leu Trp Ser Gln Ile Gln
                                       10
Thr Thr Leu Cys Gly Arg Leu
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Arg Arg Ile Phe Thr
  1
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 Lys Glu Leu Arg Tyr Leu Gly Glu Thr Gly Lys Lys Ile Lys Ile Asp
                                       10
 Leu Met His
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 Tyr Ile Tyr Leu His Cys Ile Pro
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<400> 269

Leu Cys Trp Phe Ala Val Val Met Leu His

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Thr Tyr Phe Gly Gly Leu Arg Arg Ala
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Arg Phe Thr Ile Thr Cys Ala Asn Lys Ile Asn Val Leu Cys His
                                      10
<210> 272
<211> 28
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Thr Leu Thr Lys Leu His Lys Asp Thr Ile Arg Tyr Thr Asn Leu Cys
Arg Asn Tyr Ser His Asp Met Tyr Val Lys Asn Thr
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Ser Phe Leu Tyr Val Leu Met Val Leu Ser Gln Val Thr Lys Lys Val
Ser Arg Lys Ser Ser Arg Ser Val Arg Lys Ser Arg Leu Arg Lys
              20
Tyr Ala Arg Tyr Pro Pro Ala Leu Lys Lys Thr Thr Ser Gly Glu Ala
          35
 Lys Phe Tyr Lys His Tyr Thr Pro Cys Thr Cys Lys Ser Lys Cys Gly
                          55
 Gln Gln Cys Pro Cys Leu Thr His Glu Asn Cys Cys Glu Lys Tyr Cys
                      70
  65
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Gly Tyr Val Ile Gln Phe Phe Leu Ser Arg Lys Ile His Glu Ile

85

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Phe Glu His Glu Phe Val Phe Val Gln Val Leu Lys Gly Leu Gln
Gln Ser Leu Trp Arg Met
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Met Arg Ser Arg Ser Leu Ser Glu Leu Ser Ser
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Val Thr Leu Ser Leu Gln Tyr Leu Phe Ile Gln Ile Leu
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 Phe Lys Pro Lys Val Leu
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<212> PRT

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Lys Lys Leu Tyr Ile
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Leu Trp Arg Trp His Ser Trp
.<210> 281
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Asp Thr Ser Ala Asn Pro Met Gln Glu His Ala Ile Pro Pro Ser Asn
                                      10
                   5
Gln
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 Lys Gly Asn Gln Arg Gln Ile Arg Thr Glu Asn Leu Lys Leu Ile Ile
                                       10
 Arg Lys Thr Phe Asn Tyr His Phe Pro Tyr Phe Thr Arg Phe Ser Leu
              20
 Glu Ser Leu Met Phe Met Asp Gly Val His Leu His Gly
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Leu Leu Val His Ser

<400> 283

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His Phe Phe Phe Asn Asn Val Leu Tyr Phe Arg Pro Leu Asn Ile
                                  10
               5
Leu Cys Asp Met Val
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Pro Val Arg Thr Leu Leu Lys Arg Met Ser Ile Ser Glu Asn Ile Leu
                                   10
                5
Glu Astı
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Ser Leu Met Met Lys Leu Met Ser Val Gly Glu
 1 . 5 10
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Lys Ile Gly Leu Val Leu Pro Thr Ser Leu Pro
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 Leu Gln Asn Asn Phe Glu Val Thr Phe
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Ser Phe Ala Gly Tyr Thr Ser Ile Arg Ile Lys Val Thr Phe Ile Leu
Gln Leu Glu Ile Asp Ala Arg Arg Lys Gly Asn Glu Phe Lys Phe Leu
Asn His Ser Ala Arg Pro Asn Cys Tyr Ala Lys Val Leu Ser Arg Tyr
Thr Leu Ser
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 Thr Asn Thr Asn Ile Ile Gln Thr Lys Ile Leu Met Leu Val Ser Leu
                       10
 Val Lys Ser Cys Ile Asn Phe Thr Arg Arg
             20
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 Leu Val Phe Ile Leu Lys Ile Phe Gln Glu Thr Gln Thr His Phe Lys
                 5
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 Phe Phe Leu Val Glu Lys Ile
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  <211> 10
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  Val Thr Lys Ile Tyr Gly Phe Val Cys Ser
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Glu Glu Ile Arg Gly I
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1 10 15

Val Arg Ser Phe Ser Ser Thr Thr Ala Met Asp Gln Asn Met Arg Ile 20 25 30

Gly Arg Val Val Glu Asn Leu Glu Arg Leu Val Leu Leu Lys Gly Leu 35 40 45

Arg Lys Pro Val Gln Leu Val Ser Phe 50 55

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<213> Arabidopsis sp.

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Tyr Gln Leu Ile Met

<210> 296 <211> 66 <212> PRT <213> Arabidopsis sp.

Phe Arg Val Phe Cys Leu Tyr His Met Cys Leu Asn Phe Gln Ser Phe 20 25 30

Leu Phe Val Phe Gln Phe Lys Asn Asn Val Tyr Val Val Ser Leu His 35 40 45

Arg Pro Leu Glu Lys Lys Ser Phe Ala Gln Leu Tyr Ile Tyr Leu Val

Phe Ile

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Arg Lys Ile Thr
  1 .
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<212> PRT
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Tyr His
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Lys Lys Ile Leu Val Met Asn Glu Val
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 Val Leu Ala Arg Leu Val Leu Lys Arg Phe Ser Arg Phe Asn Phe Val
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 Val Tyr
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 <212> PRT
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 Val Ile His Gly Arg Ile Ile Asn Lys Val Ala Val Ala Tyr Glu Arg
 Phe Tyr Phe Asn Val Asn Met Tyr Leu Met His Leu Thr Phe Ser Ile
              20
                                   25
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Thr Asn Lys Asn Lys Lys Glu Lys Ser Ser Leu Lys Ser Glu Ser
                                     10
Asn Tyr Phe Gln Lys Ile
             20
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Ile Ile Asn Leu Asn Val Trp Asn Arg Glu Arg Leu Leu Asn Ile
                                    10
Asn Ala Lys Tyr Thr
            20
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 Lys Trp Arg Asp
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SEQ ID NO:2

Amino acid sequence of FIE1.

SEQ ID NO:3

cDNA sequence of FIE3.

SEQ ID NO:4

Amino acid sequence FIE3.

SEQ ID NO:5

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Genomic sequence of FIE3.

SEQ ID NO:6

Genomic sequence of FIE1.

Seq. ID No: 1 Seq. ID No: 2

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: 2136 servence Size Sequence Position: 1 - 2136

Translation Position: 1 - 2136;

Genetic Code : Universal

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AAAGGTGAGTTGTGTGTGTCAGGTCCAAAATAAAAGTTTGTCGTGAGGTCA AAATCTACGGTTACAGTAATTTTAATAACCTGTGAATCTGTGTCTAATCGAAAAT TACAAAACACCAGTTGTTGTTGCATGAGAGACTTGTGAGCTTAGATTAGTGTGCG AGAGTCAGACAGAGAGAGATTTCGAATATCGAATGTCGAAGATAACCTTAGG GAACGAGTCAATAGTTGGGTCTTTGACTCCATCGAATAAGAAATCGTACAAAGT GACGAATAGGATTCAGGAAGGGAAGAAACCTTTGTATGCTGTTGTTTTCAACTTC CTTGATGCTCGTTTCTTCGATGTCTTCGTTACCGCTGGTGGAAATCGGATTACTCT **GTACAATTGTCTCGGAGATGGTGCCATATCAGCATTGCAATCCTATGCTGATGAA** GATAAGGAAGAGTCGTTTTACACGGTAAGTTGGGCGTGTGGCGTTAATGGGAAC CCATATGTTGCGGCTGGAGGAGTAAAAGGTATAATCCGAGTCATTGACGTCAAC AGTGAAACGATTCATAAGAGTCTTGTGGGTCATGGAGATTCAGTGAACGAAATC AGGACACAACCTTAAAACCTCAACTTGTGATTACTGCTAGCAAGGATGAATCT GTTCGTTTGTGGAATGTTGAAACTGGGATATGTATTTTGATATTTGCTGGAGCTG GAGGTCATCGCTATGAAGTTCTAAGTGTGGATTTTCATCCGTCTGATATTTACCG CTTTGCTAGTTGTGGTATGGACACCACTATTAAAATATGGTCAATGAAAGAGTTT TGGACGTACGTCGAGAAGTCATTCACATGGACTGATGATCCATCAAAATTCCCC ACAAAATTTGTCCAATTCCCTGTATTTACAGCTTCCATTCATACAAATTATGTAG ATTGTAACCGTTGGTTTGGTGATTTTATCCTCTCAAAGAGTGTGGACAACGAGAT CCTGTTGTGGGAACCACAACTGAAAGAGAATTCTCCTGGCGAGGGAGCTTCAGA TGTTCTATTAAGATACCCGGTTCCAATGTGTGATATTTGGTTTATCAAGTTTTCTT GTGACCTCCATTTAAGTTCTGTTGCGATAGGTAATCAGGAAAGGAAAGGTTTATGT CTGGGATTTGAAAAGTTGCCCTCCTGTTTTGATTACAAAGTTATCACACAATCAA TCAAAGTCTGTAATCAGGCAAACAGCCATGTCTGTCGATGGAAGCACGATTCTT GCTTGCTGCGAGGACGGGACTATATGGCGCTGGGACGTGATTACCAAGTAGCGG TCTGAGTCTTGTAGGAATTGATGAATTAGGAGTGCGAAGAAATGAGATATCCAT TCTTTTATTGTAATTCTGATCATGTTGCTACTCCCTGAGACCTTGAGATGCTCTTT GTAGCCTTGTTAACGTCCACCCTTGTACCACAGTGTATACCCTTTCTGGAGATTT TGTCTTATTCTCTTAGTTCAATACACAAGGCTGTATCCTGGAGCTTTATTGCAGG AACCACTCTCTTTCATAAGCTTTCTAGTATTC

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DLKSCPPVLITKLSHNQSKSVIRQTAMSVDGSTILACCEDGTIWRWDVITK.

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SCHOOL STATE		MACAG	SACA:	1830	XIXIX	1956	ACCOMAN		ATATICA		22 AACAAR		2320 1320 2320 2320 2320 2320		2640 CAGTTOTT	191.191	NCT/CCN	3	2690	CCXXX	2810	TICICA	VITICION	2930	TIGHT	
1580 CATCTATG		TAAATA	TANATA	1820	TACTATE		ACANANA ACANANA		2970	200	2190	2	2310 ATTITITION		AACACC	A CAC	2560 Literation	STCITE OF	2680		9	TITIOG	TTTTOG	. 29	MOGITAL	
1570 TITICATION		1690 KGTANGCTT	TANGCE	1 Jacobse	CATOCA	1940	WATTE	1	2063 AAAITCU	NAME OF THE PERSON OF THE PERS	30 TCCTTT		23 TYXXXI	3	2430 MTINCN	ATTACA	2550 TAGTTGG	WGTTGG	44141	CCITING	9080		TGTTTG	2920	CAACATU	
CINTIN		16 ATGANAG	KICANAS	1810	TENTENCY	1070	100	7	1100	5	2180	ATMIN	2300 Trining		2420 AATCGVAA	TCCIAA	AGTCAN!	XCIICAN	3670				CTTITIC	2910	A CHARTE	į
1560 COTTICITY	dunt than	1680	TANCAC	1800	ACTATICS ACTATICS		SCTASTI	A PARTY	בניבר הליניה ב ערטיבריטע	CCICAC	2170 CANATICT	SAATICE	2290 Literature	XXIIIC	2 ALCHOIN	SIGNOTE	2540 3034A03	CCAACC	2660	Treated Treated		00	OCCITI	39	TTOCACA	
1550 LASTTAT		1670	CTTTANT		ALCO TO		ANTIGERA ANTIGERA	MATISTA	2040 11.11.11.11.11.11.11.11.11.11.11.11.11.	ATTACAGA	50 TTCAAT	TTCAAT	22 NACGETEA	AACGTTA	2410 GAATCT	CHARCE	2530 AACCITIM	WCCTTS	9	ICCICGI 13 MICH	100	2780	TOTAL STATE AND CONTINCT THE THE THE THE THE THE THE THE THE TH	2900	CTOSTT	
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15 TCTATT	TCIWE I	1660	KAKTIKA	1780	ATCCTTA		G TETOSTP	C.CC.N	2030 44144444	ALC: T	2150	TACTITIE	2270 2270 1784GHCCTU	METCET	2 AALAAA	THETANI	2520	CANTON	2640	TCAACT	LANCI	2760	CACATTIC	1	TTAGTT	~
1530 CACACT	N CACO	1650	SCANCE SCANCE		CWGTW		1966	CKKK T	2020 2020	XXXXX	2140 Liberale	TANTIA	2 Andreas	NATITE	2390	XCXCI XX	2510	CANTAIN	0	GUIGHT	Grifeli	2	THICAIT	000	GTANCAT	2
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15 TCAAACC	TCAME	1640	ATTITA	1760	TTANTIO	TIMIT.	00	XXX	2010	WICTAN	2130	ATTACK	2250	TCATEGO		AVANIC	2500	NEWENC	2620	NCCTTT	MACCATA	2740 Januari	SONCTO		ATTENTAL	TACIL IN
1510 3CGGACA	SCOOK	630	ANANIC	ے ا	TTTIOGC	TENTING.	1880	CHACL	2002	CXX	2120	MINITAL	andan	T.X.T.T.	2370	TOOCT	2490	CAGACA	10	ACOUGH SOCONGA	SOCONCO	7.	AATTICT		2860	MIOCIN
500 Leesel	XXXTXO	4	ICEANCE ICEANCE	1750	CCTOCU	TCICCA	1870	CATTO	95 41.00.01	CATANA	2 andar	SICKE	2240	ATATAT	2360	TITICAC	01	COCOCO	3.6	T. MOCAN	CAGCAN	2730	IGITATION IGITATION		Tricerre	TTGCTT
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	cord5 's/n.se	C1 # 17		land		1100d5			31onds		3 loods		a)lond		e.) jond		e31ond		[a]lonx		P. 100			fle3lond5'8/ cer1n2(1>24)		(e)loc

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4260 4270	VICCIGACTICHTITTTTTTTTTTTGGGGATTAVGACTGFFACTTTTAVGTGATGAATGTTGGGAATGTTGGAATGTTGAAACT VICCIGACTICHTITTTTTATTTGTGGGGATTAXGACCTGCTTTAATTGAATGAATGTAATGT	TOWN TOWN	ANGOGRANICCATCTINGTITICARAANTIGINGGATTITICATCCTCTGADATTTGCTGCTGTGTGTGTGTGTGTGTGTGTGTATGCAAAATATGGTCAATGAAAGGTACGATGATGAGGTACGAGCAACAATATGAAAAATATGAAAAATATGAAAAAAAA		IVN I	TTATOCTCTCAAA TTTATOCTCTCAAA	4930 4940 4950 4960 4970 4980 4990 5000 5010 5020 5030 5040 5040 1010 1010 1010 1010 1010 101	TCAUCACATAITITACAGITGAACITITITGIGGITIGCAGGGACCITCAGAIGTICTATTAAGATACCGGGITCCAAGGGGGAATATAGA TCAUCACATAITAACATATAACATATTIGGAGGAGGAGGAGGGTTCTATTAAGATACCGGGTTCCAAGGGGAGATATAGA TCAUCACATATAACATATAACAAGGTTGCAAGATATAGA TCAUCACATATAAGATAACAAGGTTGGAATATAGA TCAUCACATATAAGATACCGAAGATAGATAGATAGATACCGGGTTCCAAGGGGAATAGAAAAAAAA	MTTGCAFTCTRINGA MTTGCAFTCTRINGA 5370	AGGAAGGAAAGGTTTATGTCTGGGATTTGAAAAGTTGCCCTCCTGTTTGATTACAAAGTAAGT	TCFFFBACANATGFFFFBGFCFFGACATGATFFCFGFFRXXATFACAATCAATCAATCAAAGTGFGTGFAATCAACAACAACAACAATCAATGFF ->TCFFFBACAAATGFFFFBGFCFFGACATGAFFFYCFGFFRXATFATCAATCAATCAAGTGFGFTAATCAAAACAACAACAATGFCTGFCGATGAAGTGFAATCAATCT ->TCFFFBACAAATGFFFFBAGTCFFGAATGFTAATGAATAAAAAAAAAAAAAAAAAAAA
4250 4250	CTTCCTCATTANCACCTCT CTTCCTCATTANCACCTCTCT 4360 4370	TRACTICTICACCOATA TRACTICTICCICACCAATA 100 100 100 100 100 100 100 100 100 10	EXCOCTTOCINGITISTS FINACTICAL COTAGETISTS  4520	PECSTIFICIAL CALCITETY PECSTIFICITATE SATE AND 4730 4740	ACINITITICITITIAN CETICI ACINITITICITITIAN CETICI 4850 4860	TIGTAACCGTIOGITTIOGICAT FIGTAACCGTIOGITTIOGICAT GTAACCGTIOGITTIOGICAG	6990 GTGTGGACACCACATCCTO GTGTGCACATCCTO GTGTGCACATCCTO	TRANCTITUTICINGTUTICO TRANCTITUTICINGETITICO 5220 5230	CACACACTCGTTACATACAA CACACACTCGTTACATACAAA CACACAG CACACACAC CACACAC C	TOGGATTTGAAAAGTTOCCC TOGGATTTGAAAAGTTOCCC S470 5480	ATCACACAATCAATCAAAGA ATCACACAATCAAAGA
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